

A QUARTETTE OF MUSEUM PUBLICATIONS.¹

BY the issue of the handsome and beautifully illustrated volume standing first on our list, the Trustees of the British Museum have followed the lead set a couple of years ago by the appearance of the "Monograph of Christmas Island," and have thus added a second work describing the fauna of a definite area to the long list of publications bearing their name on the title-page. And there can be little doubt that this new departure will be welcomed by naturalists and by the public at large. In the present instance it has afforded a means of commemorating in a graceful and fitting manner the munificence and generosity of the originator of the *Southern Cross* expedition, and has likewise furnished zoological science with a valuable memoir on the fauna, flora and petrology of the Antarctic. How valuable such a publication is at the present time needs no comment here; and it will accordingly suffice to say that with the "Antarctic Manual" and the present volume



FIG. 1.—Adelia Penguins on their Nests. (By permission of Sir George Newnes, Bart.)

the scientific staff of the *Discovery* will, on their return, have an excellent basis for the commencement of their work.

The *Southern Cross* expedition, we may remind our readers, was fitted out in 1898 by Sir George Newnes, regardless of expense, the zoological staff consisting of Messrs. N. Hanson and H. Evans. On the return of the vessel, Sir G. Newnes, with characteristic generosity, presented the British Museum with the first "pick" of the natural history collections, desiring that the duplicates should be distributed among other museums, both British and foreign. Unhappily, Mr. Hanson did not survive to superintend the sorting and description of the extensive collections formed during the voyage, and there was consequently considerable difficulty in identifying some of

the specimens, more especially in correlating the skulls with the skins of the fine series of Antarctic seals, which formed, perhaps, the gem of the entire collection. Moreover, the loss of an important memoir on the white seal which had been drawn up with great care by Mr. Hanson was an irretrievable misfortune.

The task of describing the different portions of the collection was divided among a large number of specialists, the editorship of the memoirs relating to vertebrates being assigned by the Director of the Natural History Branch of the Museum to Dr. Bowdler Sharpe, while Mr. F. J. Bell prepared for press the invertebrate section of the work. Altogether the work comprises twenty-two separate memoirs, for which the services of as many specialists were secured.

The new forms described in the volume are not very numerous. They include, however, three genera of fishes, each represented by one or more new species, and two specific representatives of a previously named genus. The other new forms are all invertebrates. In this connection it may be observed that there is a want of uniformity between the plans followed by the two editors. In the vertebrate section each new form is indicated as such in the heading, but this is not so in the invertebrate part. It is not a matter of much importance, but still uniformity would have been advisable.

The most generally interesting sections of the book are undoubtedly those treating of the seals and the penguins. The description of the seals was originally undertaken by Captain Barrett-Hamilton, who, we believe, had to leave for South Africa before the volume was finished. Owing to the destruction of the labels, this gentleman was unable to correlate the skins with the skulls, and it was consequently only the latter that could be specifically identified with certainty; his descriptions are, therefore, chiefly limited to the skull and dentition. At a later period it was, however, found possible to assign the skins to their respective species, and their description was undertaken by Mr. E. A. Wilson, now serving on board the *Discovery*. When this identification was made, that eminent artist Mr. H. Grönvold was commissioned to draw the five plates of seals, which were coloured by Mr. Wilson himself and form one of the most striking features of the book. The exclusively Antarctic seals are four in number, namely Weddell's seal (*Leptonychotes weddelli*), the leopard-seal (*Ogmorhinus leptonyx*), the white seal (*Lobodon carcinophagus*) and Ross's seal (*Ommatophoca rossi*), each the sole representative of its genus. Ross's seal, previously known only by the skull, is a most extraordinary-looking creature, recalling, in the curious inflation of the throat, a pouter-pigeon. Captain Barrett-Hamilton comments on the remarkable dissimilarity presented by the dentition of the four species and correlates this with the nature of their food. Specimens of three of the species are exhibited in the Natural History Museum.

The penguins, together with the other birds, are described by Dr. Bowdler Sharpe. They include three species, of which two, the emperor-penguin (*Aptenodytes forsteri*) and the Adelia penguin (*Pygoscelis adeliae*) receive the largest share of attention. Two coloured plates are devoted to the latter, while numerous text-figures (two of which we are enabled to reproduce) illustrate the haunts and habits of both species. The Adelia penguin is a migratory species, which congregates during

¹ (1) "Report on the Collections of Natural History made in the Antarctic Regions during the Voyage of the *Southern Cross*." Edited by R. B. Sharpe and F. J. Bell. Pp. ix + 344; illustrated.

(2) "Catalogue of the Collection of Birds' Eggs in the British Museum (Natural History)," vol. ii. By E. W. Oates. Pp. xx + 400; illustrated.

(3) "Guide to the Galleries of Mammalia in the British Museum (Natural History)." Pp. v + 126; illustrated.

(4) "Guide to the Coral Gallery in the British Museum (Natural History)." By R. Kirkpatrick and F. J. Bell. Pp. v + 73; illustrated. London: Published for the Trustees of the British Museum, 1902.)

the breeding season in enormous rookeries, and special interest attaches to a photograph of the arrival of a party of these birds on the Antarctic land. The curious discovery that these birds as they ascend the cliffs make deep groovings in the solid rocks with their claws was not announced in time to be mentioned in the volume. The eighth and last coloured plate represents the remarkable colour-phases presented by the eggs of MacCormick's skua (*Megalestris macormicki*).

All concerned in this important contribution to natural history are to be congratulated on the successful completion of a by no means easy task.

Our congratulations must likewise be offered to the author of the second work on our list, the first volume of which has been already noticed in these columns. Since the appearance of the first volume the Museum collection of eggs has received a most important addition by the bequest of the Crowley collection, noted on account of its richness in the eggs of Australian birds. The registration of this vast collection was not completed when the MS. of a large portion of the second volume went to press, so that Mr. Oates has been compelled to add an appendix. The collection will also, we presume, render necessary an appendix to the first volume, if only to include the great auk's egg which forms one of its treasures. Previously the Museum possessed only two bleached eggs of that species, which are entered in the catalogue as valueless.

Even with the addition of the Crowley bequest, the Museum collection is by no means so extensive as is desirable, although it is probably far ahead of any other. To say nothing of many species totally unrepresented, there are many birds—among them such well-known forms as the secretary-bird, the bay vulture and the South African griffon vulture—of which there are not more than two or three eggs in the collection.

Among the special rarities recorded in the volume before us, mention may be made of two eggs of the sanderling (*Calidris arenaria*)—the one from Grinnell-land and the other from Iceland—and three assigned to the knot (*Tringa canutus*). Two of these latter (belonging to the Crowley bequest) were taken in Iceland, while the third is one of a clutch of four, said to have been taken with the hen-bird, sent to the late Mr. H. Seebohm from Disco Island. All three specimens are alike; but, according to Mr. Oates, "they bear an exact resemblance in size, shape and colour to some of the eggs of the common snipe. The genuineness of these eggs therefore requires confirmation, but they are probably correctly identified." Here we may call attention to what, in our opinion, is an imperfection in the indexing of the volume. Species of which there is a supplemental notice in the appendix are duly recorded in the index, but this is not the case with genera. It is true that such genera do not receive a separate heading in the appendix, but we nevertheless think they should have been indexed as occurring there; it would have made reference easier.

Other rarities catalogued include eggs of the American noble snipe (*Gallinago nobilis*), two; the Malagasy snipe (*G. macrrodactyla*), three; the black jacana (*Jacana nigra*), two; the black-winged courser (*Rhinopterus chalcopterus*), three; the African wattled crane (*Bucconas carunculatus*), three; the white-winged trumpeter (*Psophia carinata*), two; and the seriema (*Cariama cristata*), three. Of the two species last mentioned, all the eggs in the collection were laid in confinement, those of the trumpeter in Mr. Blaauw's aviary in Holland and those of the seriema in the London Zoological Society's menagerie.

The volume is illustrated by fourteen beautifully coloured plates of eggs, drawn and coloured by Mr. H. Grönvold. Apart from their special interest to oologists, these figures are of great value to the general naturalist as giving him a much better idea of the prevalent type

of coloration characterising the eggs of different groups of birds than can be obtained from the figures of exclusively British species. Both author and editor appear to have executed their tasks carefully and conscientiously, and when the remaining volumes are issued the work will not only be invaluable, but absolutely unique.

The works standing third and fourth in our list are of a totally different type from those already noticed, and are intended for the general public rather than for scientific naturalists, although even the latter class of readers may perhaps gain some information from them in regard to those sections of zoology of which they have not made a special study. Before proceeding further we may say a word with regard to the covers and title-pages of these two little works. In the "Mammal Guide" the words "British Museum" are printed in large type and "Department of Zoology" in smaller type, whereas just the reverse of this occurs in the "Coral Guide." Apart from the question of uniformity (which we consider by no means an unimportant one), there seems no doubt that the former style is far the most preferable. It may be added that the address "Cromwell Road, London, S.W.," which appears on the cover of the "Coral Guide" is, in our opinion, quite unnecessary, and not suitable to the dignity and importance of a great public institution.

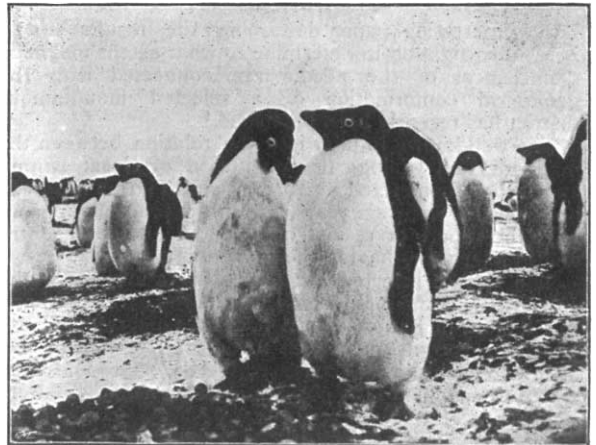


FIG. 2.—Adelia Penguins Paired. (By permission of Sir George Newnes Bart.)

If, however, it is required in the one "Guide," it is also necessary in the other.

The two "Guides" differ in that the one devoted to the mammal galleries is the seventh edition, while the other is the first issue; a further difference is to be found in the fact that whereas the names of the authors appear in the second, no such information is afforded in the first. Another point of distinction is the greater prominence given to popular names and the smaller amount of technical detail given in the former than in the latter. In the "Mammal Guide," for instance, the English names of the animals are alone placed under the figures, whereas many of the figures in the "Coral Guide" have only the scientific names, and when English names are given they occupy the second instead of the first place. It is true, as stated in the preface, that it is less easy to avoid the use of technical terms in dealing with the lower invertebrates than when treating of mammals or birds, and popular names are not so readily at hand. We venture to think, however, that more might have been done in this direction than the authors have thought fit to attempt. In any case, the substitution of terms like "hairs" for "cilia," "feathery" for "plumose" and "horny" for "chitinous" could be made without any loss of accuracy

and with advantage to the public. It is extraordinary how limited is the vocabulary of a large portion of even the well-educated section of the public: and it is the too free use of technical terms in the better class of popular natural histories which drives people to those of an altogether inferior description. Another point to which we would draw attention in connection with the "Coral Guide" (which, by the way, includes sponges and various other low invertebrates) is the advisability of omitting the names of describers of particular species or structures. Such names as Wyville Thompson, Hickson, Duerden and Shipley are familiar enough to zoological students, but they are quite unknown to the outside public for whom the book is intended.

A feature of the "Coral Guide" is the wealth and beauty of the illustrations, which render it a most wonderful shillingworth, altogether apart from its high value as an excellent introduction to the groups of animals of which it treats. A number of new illustrations also characterise the seventh edition of the "Mammal Guide," which, for reasons apparent to those in the "know," the present writer is debarred from either criticising or commending.

R. L.

TERRESTRIAL MAGNETISM.

AN interesting paper describing the results of an investigation to determine to what extent magnetic disturbances of the needle are connected with the geological conformation of a selected mountainous district has recently been published.¹

The well-known inquiry into the relation between the magnetic and geological constitution of Great Britain and Ireland conducted by Rücker and Thorpe has been before us for some six years, and in the present paper we have the report of results obtained in another country and in later years having the same object in view.

The region selected for the observations was the Kaiserstuhl, a mountainous district in the neighbourhood of Freiburg in Baden, of which exact topographical and geological surveys had been made, and it is from this source that the maps accompanying the paper and upon which the results of the observations are exhibited were obtained.

The base station was at Freiburg on the spot occupied by Lamont in 1852, but the several observations were compared with a station nearly in the centre of the Kaiserstuhl, at which the magnetic elements were considered normal. In all, 382 determinations of the horizontal force, 140 of the inclination and 137 of the declination were made, and the epoch assigned is 1898.7, but no corrections for diurnal inequality were made. The resulting disturbances from these observations are shown on a special map of "Isanomalen."

The author arrives at the following conclusions:—(a) That wherever the geological conformation is of basalt, there he experiences disturbance of the needle partly due to permanent magnetisation of the basalt; (b) that the principal disturbances are caused by compact masses of basalt with a North Pole acting vertically upwards—or nearly so—on the north-seeking end of the needle, and the magnetism of these masses is not due to induction from the earth.

With (a) we may concur as to a connection being frequently found between the geological formation of basalt and magnetic disturbance of the needle, but it has been also shown that basalt may be present in large masses and certain forms without causing any such disturbance. The conclusion in (b) can hardly be accepted, for it is well known that in the northern hemi-

sphere the north-seeking end of the needle is generally attracted downwards by locally disturbing rocks, pointing rather to induction from the earth as the cause of the magnetisation of basalt.

In order to find an explanation of the causes of the observed disturbances of the needle, pieces of basalt were taken from the surface and from a working quarry, and their several effects upon a compass observed, but no information of importance was obtained from the experiments. The question of the effects of lightning on the magnetism of rocks is also discussed, but dismissed as untenable.

It should, however, be remarked that the author does not look for more than general results from the observations as carried out, but they certainly form the nucleus of a further survey from which more definite results might be obtained as to the connection between geological conformation and magnetic disturbances.

Having considered some of the effects of local magnetic disturbance in Germany, we may now turn to the remarkable effects of such disturbance on the magnetic declination in the United States as shown in the latest chart¹ of lines of equal value of that element for 1902.

This chart is a continuation of the series published by the United States Coast and Geodetic Survey, and gives true isogonals for every degree. An examination of the lines shows that some of the most remarkable disturbances occur in mountainous districts, especially in the State of California. With its lines of equal annual change of the declination this chart is decidedly valuable, both from the practical and scientific points of view.

The values of the magnetic dip and declination given in Father Doyle's pamphlet² are the result of eight years' photographic record taken at the Manila Central Observatory during the period January 1, 1890, to December 31, 1897. The position of this observatory has been specially selected with a view to avoiding magnetic disturbances either in the locality or the materials of the building. Curves of the mean hourly variation of the declination for each month of the eight years are given, and also curves of the mean annual and mean semi-annual variation of the dip and declination. The chief interest, however, of the data recorded lies in the values of the secular variation of both elements for the epoch 1887-99. In these we have corroborative evidence of the small secular change of the declination, and the large change which is so marked in the dip, which has taken place during the epoch 1880-1900 at the observatories of Bombay, Batavia, Manila and Hong Kong. A chart of the isogonic and isoclinic lines corresponding to the epoch January 1892 for the region comprised between the Philippine Islands and Southern Japan is appended.

THE "NATURE-STUDY" EXHIBITION.

THROUGH the courtesy of the Royal Botanic Society, the aims of which are by no means so purely social as some of its present interests might suggest, a "Nature-Study" Exhibition is now being held in Regent's Park. Never has there been a better undertaking, nor could one be set on foot, which would do more to bring about a rational system of teaching such as is now looked forward to, whereby the pupils may be keenly interested instead of bored and their work made a labour of love instead of a dreary task.

There have long been in this country those who appre-

¹ "Chart of Lines of Equal Magnetic Declination and Annual Change for 1902." (Published by the United States Coast and Geodetic Survey, February, 1902.)

² "Magnetical Dip and Declination in the Philippine Islands." Brief notice of the same by Rev. John Doyle, S.J., of the Manila Central Observatory (1901).

¹ "Erdmagnetische Untersuchung im Kaiserstuhl," von G. Meyer. (Published in the *Berichte der Naturforschenden Gesellschaft zu Freiburg* i. Br. Band xii., 1902.)